NOV 3 0 2006

**PATENT** 

### IN THE UNITED STATES BATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: PATRICK L. IVERSEN

**APPLICATION No.: 10/567,470** 

FILED: February 2, 2006

FOR: SENSE ANTIVIRAL COMPOUND AND METHOD FOR

TREATING SSRNA VIRAL INFECTION

EXAMINER: TO BE ASSIGNED

**ART UNIT: 1635** 

CONF. No: 4986

<u>Information Disclosure Statement Within Three Months of</u>
<u>Application Filing or Before First Action – 37 C.F.R. § 1.97(b)</u>

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Sir:

## **Timing of Submission**

This information disclosure is being filed within three months of the filing date of this application or date of entry into the National Stage of an International Application or before the mailing date of a first Office Action on the merits or before the mailing date of a first Office Action on the merits after the filing of a Request for Continued Examination under 37 CFR §1.114, whichever occurs last (37 CFR 1.97(b)(4)). The references listed on the enclosed Form PTO-1449 (modified) may be material to the examination of this application; the Examiner is requested to make them of record in the application.

#### Cited Information

- Copies of references 1-13 are issued patent(s) and published application(s) and are not included (see C.F.R. § 1.98(a)(2)(i)).

# Effect of Information Disclosure Statement (37 C.F.R. § 1.97(h))

This Information Disclosure Statement is not to be construed as a representation that: (i) a search has been made; (ii) additional information material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the cited information is, or is considered to be, material to patentability. In addition, applicant does not admit that any enclosed item of information constitutes prior art to the subject invention and

Attorney Docket No.: 50450-8055.US00

specifically reserves the right to demonstrate that any such reference is not prior art.

#### Fee Payment

No fees are believed due because this Information Disclosure Statement is being filed before the mailing date of the first Office Action. However, should the Commissioner determine that fees are due in order for this Information Disclosure Statement to be considered, the Commissioner is hereby authorized to charge such fees to Deposit Account No. 50-2207.

#### Patent Term Adjustment (37 C.F.R. § 1.704(d))

The undersigned states that each item of information submitted herewith was cited in a communication from a foreign patent office in a counterpart application and that this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this statement. 37 C.F.R. § 1.704(d).

Respectfully submitted, Perkins Coie LLP

Date: Maumber 30, 2006

Gina C. Freschi

Registration No. 52,062

### Correspondence Address:

Customer No. 22918
Perkins Coie LLP
P.O. Box 2168
Menlo Park, California 94026
(650) 838-4300

# INFORMATION DISCLOSURE STATEMENT BY APPLICANTO

Form PTO-1449 (Modified)

	(Use several she	ets if neces	ary)(0)	3 0 5000	إ
Sheet	1	of	To an a second	3 NE	/
		· · · · · · · · · · · · · · · · · · ·	W.	HAHEIM	

COMPLETE IF KNOWN		
Application Number	10/567,470	
Confirmation Number	4986	
Filing Date	August 6, 2004	
First Named Inventor	Patrick L. Iversen	
Group Art Unit	1635	
Examiner Name	To be Assigned	
Attorney Docket No.	50450-8055.US00	

				U.S. PATENT DOCUMENTS			
Examiner Initials*	Cite No.		tion I Code (nown)	Name of Patentee or Inventor of Cited Document	Date of Publication or Filing Date of Cited Document	Pages, Columns, Lines Where Relevant Passage Relevant Figures Appea	s or
	1.	5,185,444		Summerton et al.	2/93		
	2.	6,060,456		Arnold et al.	5/00		
	3.	6,133,246		McKay et al.,	10/00		
	4.	6,228,579		Zyskind et al.	5/01		
	5.	6,239,265		Cook	5/01		
·	6.	6,365,351		Iversen	4/02		
	7.	6,495,663		Rothbard	12/02		
	8.	6,677,153		Iversen	1/04		
	9.	6,784,291		Iversen et al.	8/04		
	10	6,828,105		Stein et al.	12/04		
	11.	6,841,542		Bartelmez et al.	1/05		
	12	7,049,431		Iversen et al.	5/06		
	13	7,094,765		Iversen et al.	8/06		
	,		FC	DREIGN PATENT DOCUMENTS			-
Examiner Initials*	Cite No.	Foreign Patent or Appli Office NUMBER	cation Kind Cod	· · · · · · · · · · · · · · · · ·	Date of Publication or Filing Date of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	Т
		OTHER PI	RIOR A	RT-NON PATENT LITERATURE D	OCUMENTS	<u> </u>	
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume issue number(s), publisher, city and/or country where published.					
	14.	Agrawal, S., S. H. Mayrand, et al. (1990). "Site-specific excision from RNA by RNase H and mixed-phosphate-backbone oligodeoxynucleotides." <i>Proc Natl Acad Sci U S A</i> , <u>87</u> (4): 1401-5.					
	15.	Bailey, C. P., J. M. Dagle <i>et al.</i> , "Cationic oligonucleotides can mediate specific inhibition of gene expression in Xenopus oocytes." <i>Nucleic Acids Res</i> , <u>26</u> (21): 4860-7 (1998).					
	Banerjee, R. and A. Dasgupta (2001). "Interaction of picornavirus 2C polypeptide with the viral negative-strand RNA." <i>J Gen Virol</i> <u>82(Pt 11)</u> : 2621-7.						

EXAMINER		DATE CONSIDERED	
*EXAMINER:	Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not		
	considered. Include copy of this form with next communication to application(s).		

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Form PTO-1449 (Modified) (Use several sheets if necessary)

of

Sheet

COMPLETE IF KNOWN		
Application Number	10/567,470	
Confirmation Number 4986		
Filing Date	August 6, 2004	
First Named Inventor	Patrick L. Iversen	
Group Art Unit	1635	
Examiner Name	To be Assigned	
Attorney Docket No.	50450-8055.US00	

		FOR	REIGN PATENT DOCUMENTS			
Examiner Initials*	Cite No.	Foreign Patent or Application  Kind Code Office NUMBER (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication or Filing Date of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	Т
	17.	Banerjee, R. and A. Dasgupta (2001). "Specific interaction of hepatitis C virus protease/helicase NS3 with the 3'-terminal sequences of viral positive- and negative-strand RNA." J Virol 75(4): 1708-21.				
	18.	Banerjee, R., A. Echeverri, et al. (1997). "Poliovirus-encoded 2C polypeptide specifically binds to the 3'-terminal sequences of viral negative-strand RNA." J Virol 71(12): 9570-8.				
	19.	Banerjee, R., W. Tsai, <i>et al.</i> (2001). "Interaction of poliovirus-encoded 2C/2BC polypeptides with the 3' terminus negative-strand cloverleaf requires an intact stemloop b." <i>Virology</i> , 280(1): 41-51.				
	20.	Barawkar, D. A. and T. C. Bruice, "Synthesis, biophysical properties, and nuclease resistance properties of mixed backbone oligodeoxynucleotides containing cationic internucleoside guanidinium linkages: deoxynucleic guanidine/DNA chimeras." <i>Proc Natl Acad Sci U S A</i> , 95(19): 11047-52. (1998).				
	21.	Blommers, M. J., U. Pieles, et al. (1994). "An approach to the structure determination of nucleic acid analogues hybridized to RNA. NMR studies of a duplex between 2'-OMe RNA and an oligonucleotide containing a single amide backbone modification." <i>Nucleic Acids Res</i> 22(20): 4187-94.				
	22.	Gait, M. J., A. S. Jones, et al. (1974). "Synthetic-analogues of polynucleotides XII. Synthesis of thymidine derivatives containing an oxyacetamido- or an oxyformamido-linkage instead of a phosphodiester group." <i>J Chem Soc [Perkin 1]</i>				
	23.	Lesnikowski, Z. J., M. Jaw methanephosphonates) o	vorska, et al. (1990). "Octa(the f partially defined stereocher binding to pentadecadeoxyr 5.	nistry: synthe		
	24.	Linkletter, B. A. and Bruic deoxynucleic guanidine ([	e, T.C., "Solid-phase synthes DNG) modified oligonucleotide deletions on binding and fid	les containin	g neutral urea	
	25.	Mertes, M. P. and E. A. C dinucleosides. 3'-Thymidi	oats (1969). "Synthesis of canyl 5'-thymidinyl carbonate, 3 and 3'-(5-fluoro-2'-deoxyurid 7.	3'-thymidinyl	5'-(5-fluoro-2'-	

EXAMINER		DATE CONSIDERED
*EXAMINER: In	nitial if reference considered, whether or not criteria is in confe	rmance with MPEP 609. Draw line through citation if not in conformance and not
co	onsidered. Include copy of this form with next communication	to application(s).

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Form PTO-1449 (Modified) (Use several sheets if necessary)

of

3

Sheet

COMPLETE IF KNOWN			
Application Number	10/567,470		
Confirmation Number	4986		
Filing Date	August 6, 2004		
First Named Inventor	Patrick L. Iversen		
Group Art Unit	1635		
Examiner Name	To be Assigned		
Attorney Docket No.	50450-8055.US00		

		FOREIGN PATENT DOCUMENTS				
	Date of					
		Foreign Patent or Application Publication or Pages, Columns, Lines,				
Examiner	Cite	Filing Date   Where Relevant   Kind Code   Name of Patentee or Applicant   of Cited   Passages or Relevant				
Initials*	No.	Office NUMBER (if known) of Cited Document Document Figures Appear	Т			
	26.	Micklefield, J., "Backbone modification of nucleic acids: synthesis, structure and				
		therapeutic applications." Curr Med Chem, 8(10):1157-79 (2001).				
		Moulton, H. M., M. H. Nelson, et al. (2004). "Cellular uptake of antisense morpholino				
	27.	oligomers conjugated to arginine-rich peptides." <i>Bioconjug Chem.,</i> 15(2): 290-9.				
		Nelson, M. H., D. A. Stein, et al. (2005). "Arginine-rich peptide conjugation to				
		morpholino oligomers: effects on antisense activity and specificity." <i>Bioconjug</i>				
	28.	Chem., <u>16(4)</u> : 959-66.				
!		O'Ryan, M. (1992). Clinical Virology Manual. S. Spector and G. Lancz. New York,				
	29.	Elsevier Science: 361-396.				
		, , , , , , , , , , , , , , , , , , ,	Pardigon, N. and J. H. Strauss (1992). "Cellular proteins bind to the 3' end of			
	30.	Sindbis virus minus-strand RNA." <i>J Virol.</i> , <u>66(2)</u> : 1007-15.				
		Pardigon, N., E. Lenches, et al. (1993). "Multiple binding sites for cellular proteins in				
	31.	the 3' end of Sindbis alphavirus minus-sense RNA." <i>J Virol.</i> , <u>67</u> (8): 5003-11.				
		Paul, A. V. (2002). Possible unifying mechanism of picornavirus genome replication.  Molecular Biology of Picornaviruses. B. L. Semler and E. Wimmer. Washington, DC,				
	32.	ASM Press:227-246.				
		Roehl, H. H. and B. L. Semler (1995). "Poliovirus infection enhances the formation				
		of two ribonucleoprotein complexes at the 3' end of viral negative-strand RNA." J				
	33.	<i>Virol.</i> , <u>69(5)</u> :2954-61.				
		Roehl, H. H., T. B. Parsley, et al. (1997). "Processing of a cellular polypeptide by				
		3CD proteinase is required for poliovirus ribonucleoprotein complex formation." <i>J</i>				
	34.	<i>Virol.</i> 71(1):578-85.				
		Smith, A. W., D. E. Skilling, et al. (1998). "Calicivirus emergence from ocean				
	35.	reservoirs: zoonotic and interspecies movements." <i>Emerg Infect Dis.</i> , <u>4</u> (1):13-20.				
	36.	Summerton et al., Antisense & Nucleic Acid Drug Development, 7:63-70 (1997).				
	37.	Summerton et al., <i>Biochim et. Biophys. ACTA</i> , <u>1489</u> :141-158 (1999).				
		Summerton, J. and D. Weller (1997). "Morpholino antisense oligomers: design,				
	38.	preparation, and properties." Antisense Nucleic Acid Drug Dev., 7(3):187-95.				
		Wu, G. Y. and C. H. Wu (1987). "Receptor-mediated in vitro gene transformation by				
	39.	a soluble DNA carrier system." <i>J Biol Chem.</i> , <u>262</u> (10): 4429-32.				
		Xu, W. Y. (1991). "Viral haemorrhagic disease of rabbits in the People's Republic of				
	40.	China: epidemiology and virus characterisation." Rev Sci Tech, 10(2): 393-408.				

EXAMINER		DATE CONSIDERED	
*EXAMINER:	Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to application(s).		